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ABSTRACT

This report contains the citations for the 1997 Hesburgh Awards for successful, innovative faculty development programs to enhance undergraduate teaching. The University of Missouri-Columbia, General Education Program, was the program judged to have best met the three award criteria: significance of the program to higher education, appropriate program rationale, and successful results and impact on undergraduate teaching and student learning. The university received the Award for its undergraduate learning program that focused on writing, math reasoning, computer and information proficiency, science lab, undergraduate seminars, and a capstone experience. As a result, in 1997 the campus welcomed the highest-quality freshman class in its history. Certificates of excellence were awarded also to Prince George's Community College (Maryland) for its science and technology resource center; to Rose-Hulman Institute of Technology (Indiana) for its integrated first-year curriculum in science, engineering, and mathematics; to the University of South Carolina for its integrated undergraduate-faculty development program; and to Virginia Polytechnic Institute and State University (Virginia Tech) for a faculty development institute. (CH)

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ED 403 862

HESBURGH

AWARD

1997

Theodore M. Hesburgh Award

For Faculty Development to Enhance Undergraduate Teaching and Learning

HE029944

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TIAA-CREF proudly presents the 1997 Hesburgh Award to the faculty development program judged to have best met the three award criteria: significance of the program to higher education; appropriate program rationale; and successful results and impact on undergraduate teaching and student learning.

UNIVERSITY OF MISSOURI–COLUMBIA

The General Education Program

Certificates of Excellence

Certificates of Excellence are also awarded to four meritorious faculty development programs that focus on undergraduate teaching:

- **Prince George's Community College**
  The Science and Technology Resource Center
- **Rose-Hulman Institute of Technology**
  Integrated First-Year Curriculum in Science, Engineering and Mathematics
- **University of South Carolina**
  The Integrated Undergraduate Faculty Development Program
- **Virginia Polytechnic Institute and State University (Virginia Tech)**
  Faculty Development Institute

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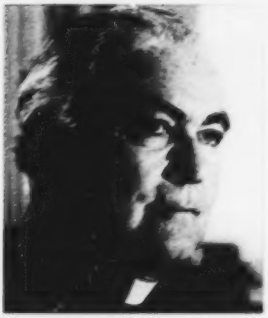


Rev. Theodore M. Hesburgh

TIAA-CREF created the Hesburgh Award to acknowledge and reward successful, innovative faculty development programs that enhance undergraduate teaching, and to help inspire the growth of such initiatives at America's colleges and universities. It is named in honor of Rev. Theodore M. Hesburgh, C.S.C., president emeritus of the University of Notre Dame, nationally renowned educator, and world humanitarian.

President of Notre Dame for thirty-five years, Father Hesburgh has been a preeminent leader on major policy commissions and study groups shaping American education. A distinguished figure in public service, he has received numerous awards, including the presidential Medal of Freedom, the nation's highest civilian honor. Father Hesburgh also served on the TIAA and CREF Boards of Overseers for twenty-eight years.

University of Missouri–Columbia

In response to a 1985 report from its accrediting association that praised the preparation of academic majors at the University of Missouri–Columbia (MU), but urged improvement in general education, the university took a close look at its undergraduate curriculum and teaching practices. The problem, too often, was narrow preparation of its graduates. Uneven divisional requirements and a cafeteria system of electives frequently left significant gaps in a student's education. Moreover, faculty operated mainly in discipline-bound units, rarely coming together to explore common teaching problems.

The challenge was to revise curricula and requirements to ensure that all students, regardless of their academic majors, would graduate with a solid background in the liberal arts and sciences — and to persuade faculty in this research university not just to accept the changes but to endorse them and work together for their full implementation.

MU'S FOCUS ON UNDERGRADUATE LEARNING HAS IMPACTED THE UNIVERSITY IN A NUMBER OF WAYS. FOR EXAMPLE, THE CAMPUS WELCOMED THE HIGHEST-QUALITY FRESHMAN CLASS IN ITS HISTORY IN 1997.

The General Education Program

Beginning in 1986, a series of broadly representative task forces explored the problem and its ramifications. These deliberations and open hearings with the faculty and students resulted in a new framework for the undergraduate experience — the General Education Architecture. Once approved by the Board of Curators and two-thirds of the faculty, the General Education Program (GEP), as it came to be known, called upon all members of the faculty to participate in delivering the seven components of the program:

1. Writing,
2. Math Reasoning Proficiency,
3. Computer and Information Proficiency,
4. Distribution of Content/Clusters,
5. Science Lab,
6. Undergraduate Seminar, and
7. Capstone Experience.

The combined components of the program are designed to ensure breadth, depth, and coherence in the undergraduate experience, to distribute GEP requirements over four years, to foster faculty collaboration and interdisciplinary linkages — especially in the clusters component —

and to produce educated, cultured, moral, and responsible citizens committed to lifelong learning and constructive participation in community life and democratic governance.

The GEP is a reasonable compromise between a core curriculum and a free-elective system. Generous flexibility for student choice is maintained within a coherent framework, and faculty from all disciplines are integrated in the delivery system at every stage. Careful planning and phased-in implementation helped to overcome pockets of resistance and to facilitate the culture change that ultimately made the program acceptable.

Support and Participation

Institutional support has been strong from the program's inception. The chancellor and the provost speak publicly and enthusiastically about the GEP and have generously funded it. Since 1987 the institution has invested $165,293 in stipends and expenses to fund the Campus Writing Program's Writing Intensive (WI) workshops for faculty and $51,000 for the GEP's initial clusters workshop. In each of the last two years, with funds from the provost, the GEP has provided departments close to $250,000 as incentive funding for implementing GEP coursework.

The chancellor and vice chancellor for student affairs have also been

Dr. Kit Salter, professor and chair of geography, teaches an undergraduate seminar, one of the components of MU's General Education Program.

instrumental in finding funds to construct a $1.5 million Black Culture Resource Center. An institutional allocation of $3.5 million supports the eight key programs that allow the university to recruit, support, retain, and graduate a large multicultural population. Strong institutional support enables the Program for Excellence in Teaching to improve undergraduate education through the training and evaluation of 250 faculty and 300 teaching assistants per year. The Learning Center provides a full range of academic tutoring; 6,000 students profit annually from 60,000 contact hours of instruction. The chancellor committed $400,000 in 1993–94 and $900,000 in 1994–95 for equipment to support innovative instruction.

Resourceful and sustained administrative support has been a key factor in the growing achievements in undergraduate education. Equally important is the impressive faculty participation. Fifty-eight percent of the university's faculty (1,700 out of 2,900) contribute each year to delivering the various components of the GEP.

Success and Impact

WI workshop evaluations from faculty reveal that teachers are consistently energized by the writing-as-discovery techniques they learn with their colleagues and are pleased with the subsequent progress of their WI students. The GEP-funded innovations in the teaching of college algebra, the gateway course to MRP (Math Reasoning Proficiency) courses, have cut by almost half a student failure rate of 18 percent, and MRP faculty and students endorse enthusiastically the teaching of math-reasoning principles across the curriculum. In the 1995 MU Senior Survey, 40 to 50 percent of respondents indicated that their educational gains were "great" or "very great" in such categories as writing clearly and effectively, ability to understand mathematical concepts, appreciation of different cultures, appreciating the arts, and other areas emphasized by the GEP.

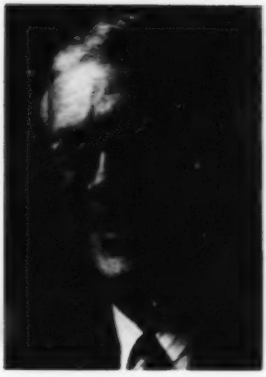
Outside assessments of the GEP have also been positive. In their 1993 report, Professors Lynn Bloom and Edward White said that the University of Missouri–Columbia "is one of the few flagship research institutions focusing new attention and resources on teaching writing, and its Campus Writing Program is the most successful of such programs that we have seen." Dr. Victoria Weiss, recent president of the American Association for the Advancement of Core Curriculum, offered this estimation of the GEP in 1995: "MU's program should serve as a model for other large state universities. It's so rare to find an undergraduate curriculum that integrates the disciplines the way MU's does, one that invites students to make interdisciplinary connections for themselves. That's truly what an undergraduate education is all about."

Upgrading the commitment to undergraduate teaching in a research university like the University of Missouri–Columbia required enlightened and dedicated faculty leadership and cooperation, strong administrative support, and a shared vision. The results on campus have so far been gratifying — better academic preparation of graduates and higher levels of satisfaction with their educational experience, significant reduction in the barriers between disciplines, improved attitudes toward teaching and learning, and increased institutional pride in all quarters.

For more information regarding the General Education Program, please contact:

Dr. M. Gilbert Porter, Director
General Education Program
The Conley House
University of Missouri–Columbia
Columbia, MO 65211

Phone: 573 882-6805
Fax: 573 884-4690
E-mail:
gepgp@showme.missouri.edu
Home page:
http://gep.ps.missouri.edu

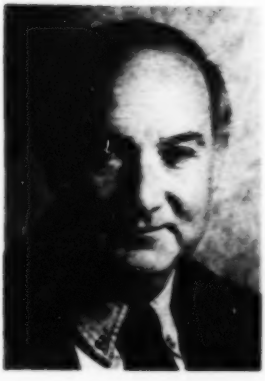


Dr. Richard L. Wallace
Interim Chancellor, University of
Missouri–Columbia

"I am particularly proud of our General Education Program. It encompasses most of the academic divisions of the University, and we have been fortunate to have exceptionally able and dedicated faculty leaders who have moved liberal arts education to a breadth, depth, and quality commensurate with a major public, research, land-grant university."

Dr. Edward P. Sheridan
Provost, University of
Missouri–Columbia

"The faculty of the University of Missouri–Columbia realize citizens are owed and expect stellar educational and research programs. The faculty are preparing students for the new millennium by offering a sophisticated and complex General Education Program. It was developed to broadly educate undergraduate students, thus preparing them for the myriad opportunities the world of 2000 promises."



Dr. M. Gilbert Porter
Director, General
Education Program

"The viability of MU's General Education Program grows out of the intelligence and vision of the original concept, the hard work and common sense of the faculty and student steering committees, the cooperation and good will of the many faculty who teach the various components, and the support of the administrators and staff who back them up."

Prince George's Community College

The Science and Technology Resource Center (STRC) at Prince George's Community College (PGCC) was founded in 1987 to improve science and technology instruction and learning. For the past decade it has been recognized at the state, regional, and national levels for its innovative professional development programs.

PGCC is a comprehensive two-year college with an annual student population of more than 35,000 in Prince George's County, near Washington, D.C. The predominantly African American county is one of the wealthiest minority counties in the country. Seventy percent of PGCC's students are minorities, and faculty have integrated multicultural teaching methods. The college offers more than one thousand courses and fifty programs of study each semester.

The STRC began its mission with a summer science institute for K-8 teachers from the local school system. Continuing these successful in-service programs, the STRC expanded them to include workshops, institutes for specific disciplines, semester-long courses, mentoring activities, and more. These programs impact some 1,600 K-12 teachers each year, making PGCC the largest provider of teacher in-service training in Maryland.

PRINCE GEORGE'S COMMUNITY COLLEGE

THE SCIENCE AND TECHNOLOGY RESOURCE CENTER

Building on Success

Building on its in-service training success, the STRC added professional development activities for college faculty in 1990. Programs over the past six years have included: ecology of the Chesapeake Bay; chaos theory in mathematics; software for engineering and engineering technology; remote sensing; image processing; geographic information systems; biology and psychology linkages; multicultural learning styles; Internet usage in the classroom; coalition building between two- and four-year colleges; computer-based labs in chemistry; and field research in endangered species and horticulture.

The knowledge base needed to develop and deliver these workshops often exceeded what was available at PGCC. So the STRC formed coalitions and partnerships with colleges and universities nationwide, federal and state agencies, local schools, and private industry. Many of these partnerships with four-year colleges and universities have benefited PGCC students as they graduate and prepare to transfer.

Reaching Out

PGCC is the lead institution in a coalition of 12 two-year colleges (Community Colleges for Innovation Technology Transfer, Inc.) from eight states, plus nine local NASA centers, and other partners. Through funding from the National Science Foundation, faculty are trained in image processing, remote sensing, geographic information systems, and other technologies. Faculty from more than 115 colleges received training the first year of the three-year grant. The STRC director serves as principal investigator for the project.

Since 1990 the STRC has raised more than $1.4 million to support faculty development activities that have served more than 750 educators. This past year more than 120 faculty from two-year colleges across the country benefited from STRC-led faculty development programs.

Dr. Patricia A. Cunniff, director of the Science and Technology Resource Center, works with students on a chemistry project. The STRC is dedicated to improving science and technology instruction and learning.

For more information, please contact:

Dr. Patricia A. Cunniff
Director, Science and Technology
Resource Center
Prince George's Community College
Marlboro 2011
301 Largo Road
Largo, MD 20774-2199

Phone: 301 322-0432
Fax: 301 336-2851

Rose-Hulman Institute of Technology

Traditional first-year courses in science, engineering, and mathematics emphasize mastery of terminology and routine manipulations. Enmeshed in these details, students may lose sight of learning. Rose-Hulman Institute of Technology created the Integrated First-Year Curriculum in Science, Engineering and Mathematics (IFYCSEM) to respond to the need for more effective teaching and learning models.

The program helps prepare Rose-Hulman graduates to integrate knowledge between disciplines, to create better problem-solving strategies, and to learn more effectively in teams. Since faculty development is the first step, IFYCSEM created an interdisciplinary faculty team and charged it with shaping the entire first-year program. The teamwork of faculty became a role model for students.

A yearlong sequence of three twelve-credit-per-quarter courses pulls together material across several disciplines. The IFYCSEM faculty team is responsible for helping students acquire the depth and breadth of the first-year material. Further, it is empowered to rearrange topics and learning experiences to help students build links between academic areas.

Using Technology

Faculty have also integrated computing technology throughout the learning environment. The software suite bundled with every student's notebook computer includes tools that allow students to offload routine manipulations and calculations and focus on the aspects of each problem that require creativity and judgment. Experience has shown that multistep problems encourage students to prepare plans that solve the problem instead of plunging into the solution. In the team environment, students work closely with faculty to crystallize their understanding in order to share their ideas with teammates.

INTEGRATED FIRST-YEAR CURRICULUM IN SCIENCE, ENGINEERING AND MATHEMATICS

Rose-Hulman has found that a more intellectually challenging learning environment also demands greater support. The program therefore focuses its emphasis on cooperative learning. The IFYCSEM faculty team seeks to build on the five key

elements of cooperative learning. This emphasis on cooperative learning provides a more supportive environment for all students, but most especially for women and underrepresented minorities.

The Program's Success

In a 1984 internal institute report, the challenge before the faculty was described as "when the practice of a profession changes, preparation of that profession must change as well." IFYCSEM has advanced Rose-Hulman toward this goal. The Rose-Hulman community perceives IFYCSEM as a major factor driving continuous improvement and curriculum innovation, impacting not only the participating faculty but also those faculty who have attended the program-sponsored workshops.

Commitment to continuous improvement has led to increased student involvement. Faculty regularly invite IFYCSEM student feedback to elicit strengths of the program and suggestions for improvement. The continuous and open dialogue with the students has paved the way to many innovations and continued success with the program.

Engineering professor Jeffrey Froyd teaches integrated curriculum students utilizing laptop computers. All Rose-Hulman freshmen are required to purchase laptops. Sharon Foltz, Wes Bolsen, Prof. Froyd

For more information, please contact:

Dr. Jeffrey E. Froyd
Department of Electrical and Computer Engineering
Rose-Hulman Institute of Technology
5500 Wabash Avenue
Terre Haute, IN 47803

Phone: 812 877-8340
Fax: 812 877-8895
E-mail: Jeffrey.Froyd@Rose-Hulman.edu

University of South Carolina

The University of South Carolina has been renowned for its University 101 faculty development program, begun in 1972, which featured comprehensive faculty training for teaching the freshman University 101 seminar. In 1988, the university turned its attention more broadly to undergraduate education and focused on the critical link between faculty development and student intellectual advancement.

Building on the momentum of University 101, the university made a formal recommitment in 1988 to undergraduate education when the provost appointed a Task Force on the Enhancement of Teaching. This group of award-winning teacher-scholars sought to change the way the university thought about learning.

The results and support were impressive. The university's reenergized focus on teaching undergraduate students featured faculty breakfast seminars and faculty development grants, including a three-year grant, funded by the Lilly Foundation, to develop a mentoring program that paired senior faculty with untenured junior faculty. Impressed with the work of the task force, the faculty voted to reconstitute it as a standing committee of the faculty senate.

UNIVERSITY OF SOUTH CAROLINA

THE INTEGRATED UNDERGRADUATE – FACULTY DEVELOPMENT PROGRAM

Linking Faculty with Students

Further institutionalization of these initiatives occurred in 1993 with the creation of the position of Associate Provost and Dean of Undergraduate Affairs. Three general principles radically redefined the university's thinking about faculty development:

1) faculty development initiatives should be closely linked with enhanced student learning;

2) more intellectual contacts should be fostered between undergraduates and faculty outside the classroom; and

3) the university should facilitate more intellectual experiences in common for faculty and students.

With these goals in mind, the office of the associate provost now supports and directs the following faculty development initiatives: University 101 faculty development program to improve the quality of teaching in first-year courses; college-specific freshman seminars, which serve as a laboratory for more effective introduction of the disciplines; comprehensive TA training; a comprehensive new faculty orientation program; a faculty

senate committee on instructional development; faculty "teaching breakfast seminar" series; faculty development grants; the Residential College; the First-Year Reading Experience program; offices for fellowships and summer programs and for preprofessional advising; the AP Advisory Council; official faculty mentors for freshman scholarship winners.

Impact

Faculty are lifelong learners who are willingly devoting more energy to undergraduates and seeing how their efforts enhance the overall intellectual climate of the campus. The university's teaching mission enjoys a university-wide commitment. The program has succeeded in convincing faculty that the tradition of "two academic cultures (professors in one, students in another)" was a false dichotomy. The new approaches have led to many successful outcomes: enhanced student retention; increased applications for admission; measurable changes in the emphasis on undergraduate education; an increased emphasis on effective teaching as a criterion for tenure and promotion; an extraordinary explosion of enthusiasm among faculty, who now willingly give more time and attention to undergraduates; and broad dissemination and replication of initiatives to improve first-year instruction, especially via the university's National Resource Center for The Freshman Year Experience and Students in Transition.

USC freshmen break into small groups at the start of each year to discuss a novel – in this case, Mary Shelley's Frankenstein *– as part of the First-Year Reading Experience, a program aimed at building a sense of community in the college experience.*

For more information, please contact:

Dr. Donald J. Greiner
Interim Provost and Vice President
for Academic Affairs
University of South Carolina
Osborne Administration Building
Columbia, SC 29208

Phone: 803 777-2930
Fax: 803 777-9502

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (VIRGINIA TECH)

Virginia Polytechnic Institute and State University (Virginia Tech)

The Faculty Development Institute (FDI) has as its focus enhancing the quality of undergraduate teaching at Virginia Tech. The program provides faculty the opportunity to rethink methods and improve instruction through the use of technology. Beginning with three pilot faculty workshops during the summer of 1993, the FDI expanded to fifty-eight customized workshops through August 1996. Over 1,025 faculty (72 percent of the total) from ninety departments have participated.

Virginia Tech

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

As Virginia's land grant university, Virginia Tech is committed to focusing on student success and improved access. The early phase of the FDI concentrated on improving core curriculum courses such as mathematics, freshman English, and humanities. These courses represented 60 percent of the total university enrollment in any given semester and affected every student who graduated from the university. The recent University Plan has also reinforced this commitment to quality education by emphasizing that undergraduate courses will be taught by full-time faculty, including its most distinguished members.

FACULTY DEVELOPMENT INSTITUTE

Information Age Skills

Basic premises for the FDI are that faculty must have the time and resources to implement course transformations, and that instructional technology should be a significant component of this process. FDI also recognized how vital Information Age skills were to use and critically analyze electronic resources. Accordingly, the institute leveraged technology to improve the productivity of student learning activities. Part of this student need was met by TechNet, a new fall program in 1996 that encompassed forty-seven different sessions on information technology literacy designed specifically for new students.

Another example of a significant curriculum innovation is the Department of Mathematics' use of technology to transform the introductory mathematics sequence. Ninety faculty in this department have been engaged in large-scale experimentation with instructional modes that include technology in classroom presentations, interactive computer laboratory work, and self-paced courses. Using powerful software tools allows problems of a more realistic character to be brought even into elementary courses, speeding the student's transition to professional-level work. The aim is to overcome

persistent conceptual barriers in courses such as introductory calculus and thus broaden by an order of magnitude the range of students who succeed in making mathematics an effective tool for later coursework and careers.

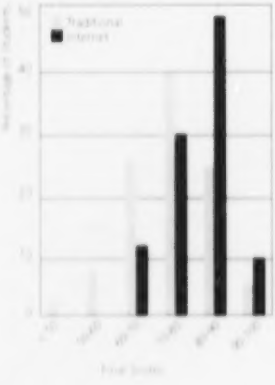
Interest by more faculty in accessing the FDI program continues to grow. Faculty are clearly committed to learning how to use technology effectively to improve their teaching and enhance the learning of their students. Students are also excited by the new learning opportunities, and their enthusiasm provides continuing motivation for faculty to participate in further professional development programs.

Impact

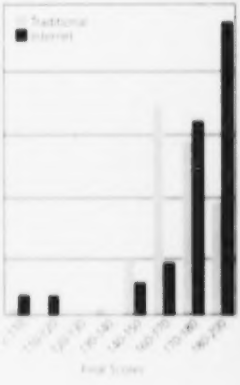
It is evident that restructuring courses through the FDI program has had a positive impact on students. They are becoming more independent learners as they interact with course materials, while also benefiting from faculty expertise and their own experience as they master course content and solve real-world problems. For example, the results from a recent analytical chemistry course were striking. As shown by the chart at right, the introduction of Internet-based instructional materials, including integrated video and text prelab procedures, led to significantly higher final scores for both lecture and lab when compared with previous score distributions from a traditionally taught course.

Virginia Tech Faculty Development Institute
One session of FDI training. Over a four-year period all 1,400 instructional faculty receive two weeks of intensive training in instructional technology techniques.

Analytical Chemistry Lecture



Analytical Chemistry Lab



For more information, please contact:
Dr. John F. Moore
Director, Educational Technologies
Old Security Building
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

Phone: 540 231-8991
Fax: 540 231-5922
E-mail: John.Moore@VT.EDU

THE JUDGES

The following panel of judges selected the 1997 Hesburgh Award and Certificate of Excellence winners:

David Alexander

Roscoe C. Brown, Jr.

Jewel Plummer Cobb

K. Patricia Cross

Elaine El-Khawas

Thomas K. Hearn, Jr.

Frederick S. Humphries

Robert McDowell

Manuel T. Pacheco

Sister Joel Read

Clifton R. Wharton, Jr.

TIAA-CREF also wishes to acknowledge the following organizations for their assistance in the preliminary evaluation of the Hesburgh Award entries: the Professional and Organizational Development in Higher Education (POD) Network; the Council of Independent Colleges; and the American Association of Community Colleges and its affiliate, the National Council for Staff Program and Organizational Development (NCSPOD).

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